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發明

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(54) 名稱: 具有塑膠封裝之半導體組件及製造該半導體組件之方法

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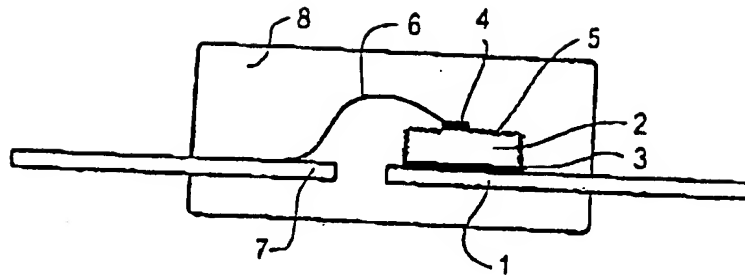
[57] 申請專利範圍:

1. 一種半導體組件, 在其上有一塑膠封裝以至少一接觸金屬層鄰接於半導體本體上, 其特徵為, 半導體本體(2)之表面至少有一未受接觸金屬層(3)覆蓋之空著的部份區域具有粗糙面, 使微接合形成在半導體本體(2)和塑膠封裝(8)之間。
2. 如申請專利範圍第1項之半導體組件, 其中接觸金屬層(3)具有鋁。
3. 如申請專利範圍第1項之半導體組件, 其中接觸金屬層(3)由以鋁為主之合金所構成。
4. 如申請專利範圍第2項之半導體組件, 其中接觸金屬層(3)由以鋁為主之合金所構成。
5. 一種製造半導體組件之方法, 係用於製造申請專利範圍第1至第4項中任一項之半導體組件, 其特徵為包含下述之步驟:
  - a) 半導體本體(2)之製造;
  - b) 接觸金屬層(3, 4)之製造;
  - c) 在半導體本體(2)之表面上製造微接合結構(5);
  5. d) 在系統載體上安裝具有接觸金屬層(3, 4)和微接合結構(5)之半導體本體(2);
  - e) 在接觸金屬層(3)和系統載體之連接指(1, 7)上連結一個或多個連接導線;
  10. f) 以塑膠封裝半導體本體(2), 接觸金屬層(3, 4), 連接導線, 連接指(1, 7)之部份區域以及系統載體之至少一部份區域, 使塑膠填入微接合結構(5)中, 將其填滿且最後硬化為止。
  - 15.

圖示簡單說明:

第一圖 顯示本發明之半導體組件, 例如發光二極體, 之橫切面。

(2)



第一圖

(Fig. 1)

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## English translation of the cited reference

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Inventor: (a German)

Applicant: Siemens AG

### Claims:

1. A semiconductor component, on which a plastic encapsulation is existed and at least one contact-metal layer is adjacent to the semiconductor body, it is characterized in that on the surface of the semiconductor body (2) there exists at least one free region which is not covered by said contact-metal layer (3), said free region has a rough face, so that a micro junction is formed between said semiconductor body (2) and said plastic encapsulation (8).
2. A semiconductor component according to claim 1, wherein said contact-metal layer (3) has Aluminum.
3. A semiconductor component according to claim 1, wherein said contact-metal layer (3) is composed of the alloy on the basis of Al.
4. A semiconductor component according to claim 2, wherein said contact-metal layer (3) is composed of the alloy on the basis of Al.
5. A production method for a semiconductor component as claimed in claims 1 to 4, it is characterized in the following steps:

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- (a) production of the semiconductor body (2);
- (b) the production of the contact-metal layers (3, 4);
- (c) the production of a micro-junction structure (5) on the surface of the semiconductor body (2);
- (d) the mounting of the semiconductor body (2) on a system-carrier, said semiconductor body (2) includes the contact-metal layers (3, 4) and the micro-junction structure (5);
- (e) on the connection-fingers (1, 7) of the contact-metal layers (3) and system-carrier one or several connection line(s) is/are connected;
- (f) a partial region of the semiconductor body (2), contact-metal layers (3, 4), connection lines and connection-fingers (1, 7) and at least one partial region of the system carrier are enclosed by a plastic, so that the plastic is filled in the micro-junction structure (5) and at last hardened.

**Brief description of the drawing:**

**Fig. 1** the cross section of the semiconductor component in this invention, for example, it may be a light-emitting diode.

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